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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,405

09/16/2003

Kouichi Fukuda

HITA.0433

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38327

7590

01/11/2005

REED SMITH LLP

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EXAMINER

CALEY, MICHAEL H

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,405

Applicant(s)

FUKUDA ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09162003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima (U.S. Patent No. 6,124,905 "Iijima '905").

Regarding claims 1 and 5, Iijima '905 discloses a liquid crystal display device having:

a transmissive type liquid crystal display panel which sandwiches a liquid crystal layer between a pair of substrates (Figure 2 element 140, Figure 4 element 20) and

a backlight (Figure 2 elements 190 and 200) which is arranged at a back face of the liquid crystal display panel and has a light source, including a light guide body as proposed (190), and a reflector (200) and

is capable of performing a transmissive display which uses light from the light source and a reflective display which uses an external light incident from a front face side of the liquid crystal display panel by reflecting the external light on the reflector (Figure 2; Column 7 lines 12-40).

Iijima '905 fails to explicitly disclose at least two or more light diffusion layers as arranged between the back-face-side substrate out of the pair of substrates and the reflector of the

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backlight. Iijima '905, however, teaches that a light exit angle control means may be provided in addition to the said diffusion layer as a means of improving contrast of the display (Column 8 lines 12-40). Iijima '905 discloses the light exit angle control means as having a laminate structure causing light diffusion (Column 12 lines 13-30), and thus may be referred to as a light diffusion layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used two or more light diffusion layers arranged as proposed in the display device disclosed by Iijima '905. One would have been motivated to use two or more light diffusion layers to control the light exit angle according to the teachings of Iijima '905 as a means of improving the display contrast.

Regarding claims 2 and 4, Iijima '905 discloses at least one of the light diffusion layers as constituted of a diffusion plate or a diffusion sheet and film (Column 7 lines 41-44).

Regarding claim 8, Iijima '905 discloses a polarizer which is arranged between the back-face-side substrate out of the pair of substrates and the light guide body and the light diffusion layer which is arranged on a surface of the polarizer at a side where the light guide body is positioned (Figure 2 elements 150 and 160).

Regarding claim 13, Iijima '905 discloses a diffusion plate or diffusion sheet which acts as one of the light diffusion layers and the diffusion plate or the diffusion sheet as arranged at a

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position closest to the light guide body among at least two or more light diffusion layers (Figure 9 elements 80, 30, and 70).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima '905 in view of Iijima et al. (U.S. Patent No. 6,359,668 "Iijima '668").

Iijima '905 fails to disclose at least one of the light diffusion layers as constituted of a diffusion tacky adhesive material. Iijima '668, however, teaches a diffusive adhesive as an alternative to a diffusion layer as a means of adhering the polarizer and the light guide while providing light diffusion (Column 11 lines 58-61, Column 22 lines 4-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a diffusion tacky adhesive material in the display device disclosed by Iijima '905. One would have been motivated to use such an adhesive diffusion material in the display disclosed by Iijima '905 to realizing a thinner display constructed from a decreased number of parts according to the teachings of Iijima '668 (Column 11 lines 58-61).

Claims 6, 7, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima '905 in view of Kuroiwa et al. (U.S. Patent No. 6,747,716 "Kuroiwa").

Iijima discloses all of the proposed limitations except for the light diffusion layer as arranged between the back face-side substrate and the polarizer or a reflective polarizer and polarizer and the diffuser as an adhesive tacky material. Kuroiwa, however, teaches an embodiment of an analogously functioning display in which an adhesive diffuser is arranged

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between the back face-side substrate and the polarizer or a polarizer and reflecting polarizer (Figure 1 elements 133, 140, 150, and 160; Column 7 lines 47-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned the diffuser adhesive between the substrate and the polarizer as proposed. One would have been motivated to place the diffuser according to the teachings of Kuroiwa to benefit from a display device having improved uniformity between colors emitted in the transmissive mode and reflective mode of the display (Column 4 lines 43-52).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima '905 in view of Satoh et al. (U.S. Patent No. 5,847,795 "Satoh").

Iijima '905 fails to explicitly disclose the polarizer as provided with an antiglare layer which acts as the light diffusion layer. Iijima '905 discloses the diffusion layer as positioned adjacent to the polarizer, but does not disclose an antiglare property of the diffusion layer. Satoh teaches an antiglare layer provided on the polarizer, which acts as a light diffusion layer (Figure 3 elements 11a-11c).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an antiglare layer on the polarizer or configure the diffusion layer on the polarizer as an antiglare layer. One would have been motivated to provide such an antiglare function as a means of improving clarity of the displayed image by reducing stray reflections of external light (Satoh, Column 5 lines 15-44).

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286.

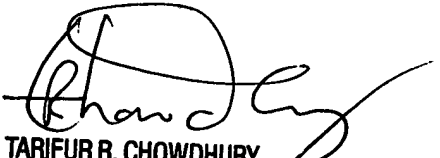
The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley
January 4, 2005


mhc


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER